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Original Articles

TOXIC HUMAN MILK.

By E. W. SAUNDERS, M.D., and C. FISCH, M.D., St. Louis.

IN a paper read by us three years ago before the Bethesda Pediatric Society, we took the position that there must be some cause other than a disproportion of nutritive elements in breast milk to account for the ill effects upon the nursling that are sometimes observed. We surmised that there must be in some cases a toxic element, perhaps a poisonous leucomain, elaborated under the influence of disturbed innervation. We are glad to state that this theory has been proven, as shown by the recital of the following cases:

Case I. Mrs. E., aet. 20, was delivered of her first child, Sept. 27, 1897. Lactation was duly established, and the milk was unusually abundant. However, the baby did not thrive; the stools were frequent and watery, greenish in color, and having an acrid character. There was much colic and tenesmus.

Examination of a sample of the breast milk resulted as follows:

Reaction alkaline.	
Specific gravity	1033
Total solids	11.8
Fat	2.7
Casein	1.4
Lactalbumin	0.7
Sugar	6.7
Ash	0.3
Water	88.2

Microscopically nothing abnormal could be discovered.

A second sample was obtained and treated with ammonium sulphate and alcohol successively; a small amount of non-dialyzable substance, which resulted in this way, was used for experimentation on two guinea-pigs. The first guinea-pig received half of it subcutaneously, dissolved in a little sterile salt solution, while the other received the second half in the same way, but after boiling for a few minutes. The result was that both animals after some hour were seized with severe convulsions, which lasted several hours. The temperature during this time was reduced (to 95.6° and 99.4° from 100.4° and 101.2° respectively.) There was a slight loss in weight (20 and 16 grammes), and impairment of appetite for the next day. After that time all the symptoms disappeared, and the animals appeared as well as before. Lack of material prevented a more accurate analysis.

Our conclusions are: the milk contained prototox-albumose, most likely the product of a faulty metabolism.

Case II. Mrs. F., milk taken the third day of menstruation. Nursling very restless; temperature 101°. Stools frequent, loose, offensive, full of undigested casein and fat. No vomiting. Milk normal microscopically.

Specific gravity	1029
Reaction slightly acid.	
Total solids	11.01
Fat	2.4
Proteids	1.1
Sugar	7.2
Ash	0.31

Twenty c.c. of this milk was concentrated in a vacuum apparatus to 5 c.c., and then precipitated with lead acetate (neutral). After carefully washing the precipitate with water, these washings and the filtrate were again concentrated to 5 c.c., and treated with hydrogen sulphid. It was again filtered, and now the filtrate subjected to dialyzation. Owing to the limited amount, no further manipulations were undertaken with the dialyzate, which amounted in quantity to 11 c.c. It was simply concentrated in a vacuum to about 4 c.c., and with this fluid the following experiments were made:

1. One c.c. was injected into a small (250 gm.) guinea-pig hypodermically. The animal's temperature rose after six hours from 100.4° to 102.6°; it lost its appetite, and after sixteen hours was found in convulsions, which lasted five hours, and then gradually subsided. The pupils were contracted. Some hours after the animal appeared well again; temperature, 101.2. It remained well afterwards.

2. One c.c. was heated to the boiling point for thirty minutes and then injected in the same way into an animal of the same size. The result was absolutely the same.

3. One c.c. of the fluid, not heated, injected into a white rat at 6 P.M. The animal was found dead the next morning.

4. The remaining 1 c.c. was treated with picric

acid and potassium hydroxid (Pfeffer's test) to test for creatin. None was found.

These data warrant the assertion that the milk contained some poisonous substance belonging to the group of animal alkaloids. Perhaps it is in some relation to the creatin group, though it certainly is neither creatin nor creatinin.

Case III. Mrs. K.; since the birth of her baby has but little milk; began to menstruate two months after delivery. The baby now, at three months, is weak, emaciated (weighing only 7 lbs.), and vomits whenever nursed by the mother. Milk from the Walker-Gordon laboratory is retained and well digested. Through the kindness of Dr. Chas. Dixon we received a sample of the mother's milk. Chemically its composition was as follows:

Specific gravity	1030
Reaction alkaline.	
Total solids	11.4
Fat	2.9
Casein	1.2
Lactalbumin	0.6
Sugar	6.4
Ash	0.30
Water	88.6

Microscopically the milk was normal. In cultures only a few colonies of staphylococcus albus were demonstrated.

A grown white rat was injected subcutaneously with one c.c. of the milk; after a while convulsions set in, coma followed, and death occurred about thirty-six hours after the injection. The milk was treated after the method described above (Case II.), and a minute quantity of a substance was obtained which yielded all the reactions of the alkaloids. Further isolation was prevented by the smallness of the amount. Guinea-pigs and white rats died from traces of this substance injected subcutaneously.

Case IV. Mrs. K.; menstruated for the first time eight months after delivery. The child, who had been in perfect health until then, was seized with quite a severe diarrhea, such as is often noted in nurslings under these circumstances. There was no fever, and no suffering apparently, although sleep was much disturbed. The stools were frequent, watery, offensive, and of a greenish color.

Nursing was intermitted until menstruation was over, and the symptoms at once disppeared. The analysis of the milk resulted as follows:

Specific gravity	1029
Acid.	
Fat	3.1
Casein	1.7
Lactalbumin	1.1
Sugar	7.2
Ash	0.16
Total solids	13.2

The milk was treated as in the other cases, and the biologic tests made, but with absolutely negative results.

Case V. Mrs. L., mother of several children; has baby six weeks old. The infant for the last few days presented symptoms of intestinal dyspepsia, namely colic, frequent stools, and great restlessness. Stools light in color and large, but showing little evidence of putrefaction. The chemical examination of the mother's milk revealed the following composition:

Solids	12.44
Fat	3.90
Proteids	2.10
Sugar	6.20
Ashes	0.24
Specific gravity	1031

Microscopically only a few bacteria (bacilli) could be seen; otherwise no anomaly.

The milk, when tested on guinea pigs, proved to be perfectly harmless; likewise it was impossible to isolate any toxic body from it. (The quantity available for this test was, it is true, only 18.5 c.c.)

Mrs. F. underwent some dental operation which exhausted her very much, and threw her in a state of high-grade nervous irritation. Shortly after coming home she nursed her nine-months-old baby which up to that time had been in perfect health. Very soon after the nursing the baby began to be restless, evidencing characteristic signs of pain and restlessness. An acute diarrhea set in, and also vomiting, which lasted for about ten hours. The symptoms disappeared as soon as the mother's milk was withdrawn.

When the baby first showed the above symptoms some milk was withdrawn from Mrs. F. and injected into a guinea-pig, and the animal developed quite a severe attack of convulsions about four hours after the injection. The convulsions were followed by a period of stupor, which lasted for a few hours, after which time the animal regained its former condition. The temperature of the animal during the time of the attack went down from 102° F. to 99.6°. Twelve hours after the experiment was begun the temperature had risen again to 101.4° F. No other experiments with this milk were made on account of the scarcity of material.

Reviewing these cases, we find that the results are by no means uniform, and some of them apparently at variance with established facts. For instance, the toxic substance in Case I. was not an alkaloid, but a toxalbumose, and yet it produced in the animals experimented upon a subnormal temperature, an effect usually ascribed to the alkaloids. However, we must not forget that the botulismus toxin lowers the temperature just as the alkaloids do.

In Case II. the poison was an alkaloid, and yet it produced elevation of temperature. Mydalein is perhaps the only ptomain known that causes fever.

In Case III. the poison was also alkaloidal, and much more virulent than in the other two cases, but

unfortunately the effect upon the temperature was not noted.

In Case IV. the absence of toxicity of the milk was demonstrated, and we are obliged to ascribe the mild derangement of digestion in the nursling to the large percentage of proteids (2.8), together with the remarkably small percentage of ash, being unassimilable without an equal amount of mineral matter.

These changes in the milk were due no doubt to the nervous disturbance of menstruation. We have abundant clinical evidence of the fact that the milk, both of human and animal origin, may become injurious owing to temporary disturbances of the nervous system; for example, when a mother nurses her child during a fit of anger, or while suffering from great anxiety, or sometimes during menstruation.

Likewise the milk of cows during their menstrual period is very certain to disagree with the baby; so well known is this fact that the laity in selecting a cow for the supply of an infant's food, prefer one that is pregnant.

We have presented only two cases of persistently toxic milk, which were established by biologic experiments, but many more could be cited from memory.

Mrs. T., the mother of five children, has been obliged to ween all her babies because of excessive pain caused by her milk, beginning the moment it reached the stomach of the nursling. All of the five children did well on milk mixture containing a good percentage of proteids.

The differential diagnosis between a case of indigestion and one of poisoning can be established only by the biologic test, but the clinic features in a pronounced case of the latter are very characteristic. Excessive and constant pain, aggravated by nursing, green, watery diarrhea, tenesmus, these symptoms ceasing immediately upon changing to any sort of diet, even if it be a milk mixture containing a higher percentage of proteids than the breastmilk, make the diagnosis certain. Usually there is vomiting and emaciation, or else no gain in weight.

In the absence of a specific acute infection (in passing we would emphasize the immunity from gastrointestinal disturbances enjoyed by the nursling at the breast of a mother affected with an acute discase), we must conclude that the poison is absorbed from the gastrointestinal canal, or the genital tract, of the mother, or that it is elaborated by the cells under the influence of perturbed innervation. The latter we believe to be the true explanation.

The following is the program of the St. Louis Medical Society of Missouri, Saturday evening, December 16th, 1899: "A Comparative, Rare but Important Form of Syphilitic Neuralgia and Its Treatment," by Dr. Jerome K. Bauduy.

PARALYSIS AGITANS WITHOUT TREMOR; CLINICAL LECTURE.

By CHARLES GILBERT CRADDOCK, M.D.,

Professor of Diseases of the Nervous System, Marion-Sims College of Medicine.

THE case I present to-day is one of more than usual interest, owing to the fact that it deviates most decidedly from a type usually described in the text-books, and because in itself it might easily be mistaken for some other form of nervous disease. I think that these deviations from a well-known type of disease are more instructive as clinical material than cases which correspond with the classic descriptions; for their examination teaches more forcibly the value of the various signs and symptoms which the physician must interpret, and upon which he must depend for the diagnosis of the seat and the nature of the disease with which he has to deal.

The history of the case is best brought out in questioning the patient. You note that he is in good general physical condition. He tells us that he is fifty-three years old; that twenty years ago he had syphilis; that three years ago he had what he calls an attack of typhoid pneumonia, during the course of which he developed a peculiar difficulty of speech, with which he is still suffering, as you easily note in his recital of his trouble. Aside from this trouble of speech, he noticed nothing peculiar until eighteen months ago, when there began to develop what he calls feebleness of his right side—in his arm, hand and leg. It is for this alleged feebleness and his difficulty of speech that he comes for consultation; especially for the latter, since he was referred to us for examination by Dr. Loeb.

The points brought out by the history are: Syphilis twenty years ago; an acute infectious disease three years ago, during which defective speech developed; and a subsequent development of weakness throughout the right half of the body.

These data are important, and of themselves direct us to a search for organic disease of the left hemispere of the brain. We must next, then, examine the motor and sensory condition of the right side of the body and compare it with that of the opposite side.

When the patient actively moves his limbs there is no evidence of marked paralysis, and when he walks there are no signs of a hemiplegic or "mowing" gait; indeed, the difference, if any, between the voluntary control of the two halves of the body is very slight; but we do note a certain slowness or deliberateness of movement that is peculiar. When an attempt is made to flex or to extend the arm or leg we encounter a certain resistance and stiffness, which prevents complete extension of the arm and of the leg; and when the attempt is persistent, the patient complains of pain in the flexor tendons and muscles. Similar

manipulations of the left members show that the left side is not thus affected for passive movement, but voluntary movement is likewise slow on the left side. Resistance to passive movement reveals no marked degree of weakness; and there is no notable difference between the power of the right and left limbs. The test of the grip by the dynamometer shows an equal excursion of the needle to 45° made by each hand. As the patient is right-handed, this equality of power of grip may be taken to indicate a slight enfeeblement of the right hand, as the difference between the right and left hand normally on this instrument is from ten to fifteen points. Thus the dynamometer has revealed a real, though slight, enfeeblement of the right upper extremity.

When the patient now attempts to write, you note how he goes about this operation, which depends upon a delicate, coördinated movement of the hand and arm. He writes very slowly and does not rest his arm on the table; his fingers do not move, but he grips the pen steadily, and the few letters he succeeds in tracing are the result of a slow movement of the whole arm.

The state of the motor functions of the right side is thus seen to be slight enfeeblement, most marked in the grip of the hand, slowness and stiffness of voluntary movements, and the resistance of the muscles to passive movement, most marked in the flexor muscles, and causing a slight constant flexion of the arm at the elbow and of the leg at the knee; and pain is caused when an attempt is made to overcome this contracture. Though these conditions do not interfere markedly with voluntary movement, beyond causing slowness of motion, you will still note, however, that there is a consequent tendency to assume when at rest a fairly fixed attitude; that is, the arm flexes almost automatically at the elbow, the fingers are contracted at the tips, the thumb seeks the index, and all the phalanges are bodily deflected toward the ulnar border of the palm. The leg is not fully extended when the patient stands erect, a slight flexion at the knee remaining; he cannot overextend the knee as we are able to do. There is also noticeable a certain tendency to incline the trunk and head forward as the patient stands.

Turning now to the face and head, you remark, likewise, slowness of movement as he turns his head to right or left, and there is some difference in the aspect of the two halves of the face. The facial lines of the right side are more marked than those of the left. The patient tells us that he has been troubled by too much saliva, and that at times it has flowed from the right corner of the mouth. As he sits here you notice that he winks less frequently than those around him, that he frequently wipes his eyes to remove the tears which tend to overflow on the cheeks. The general aspect of the face is peculiar. You remark at once the fixed expression; the eyes and face seem like those of a statue, and there are fewer facial lines than are normally observed, even on the side where they are most noticeable. From time to time, as he speaks, you observe a transitory tremor about the right corner of the mouth. When he protrudes the tongue it passes out of the mouth without deviation, and as it lies in the floor of the mouth it is symmetrical.

Before analyzing the defect of articulation, which has been amply displayed in his conversation, let us complete the examination of the motor functions by determining the state of the reflexes.

You note that the knee jerks are equal and not livelier than those of a normal individual; the reflexes of the tendo Achilles are equal and not increased.

The only satisfactory method of examining the reflex of the tendo Achilles is to have the patient kneel in a chair or on the edge of the bed with the feet thus free from support, taking care before tapping on the tendon just back of its insertion, to see that the muscles of the calf are not in a state of voluntary strain. Ordinarily this reflex may be examined without removing the shoes; but in a doubtful case the tap of the hammer should be given on the bare skin. The importance of this reflex has not been sufficiently considered; it should always form part of the routine examination of the reflexes; for its alterations have as much significance as those of the knee-jerk.

With the patient kneeling in the chair, you note the immediate and equal response as I tap the bared tendons, in the quick excursion of the feet in plantar flexion.

Next making forcible dorsal flexion of the feet by pressing the ball of the foot upward, the feet remain immobile; the rythmical alternate extension of the foot, known as foot-clonus, is not induced.

There is, then, no exaggeration of the deep reflexes of the right lower limb. The partial rigidity is unaccompanied by the exaggeration of deep reflexes usually encountered when a spastic condition of the muscles is dependent upon disturbance in any part of the pyramidal motor tract within the brain or spinal cord.

But we have not yet exhausted all the means at our disposal for questioning the state of the primary motor neuron, or motor tract of the brain and cord. We have yet to examine the plantar reflex, which is a sudden movement made by the toes and foot, and in some instances by the whole lower limb, when the sole of the foot is irritated.

The text-books tell us that this reflex movement is a dorsal flexion of the foot, with either flexion or extension of the toes. The first observer to accurately study this reflex was Dr. Babinski of Paris, whose observations have been confirmed by other well-

known observers. The normal movement of the great toe especially is flexion when the plantar surface is irritated; extension of the great toe, if it occur, is always indicative of disturbance in the central motor neuron. We shall have abundant occasion in the course of our clinical studies to demonstrate this new sign, known as the toe phenomenon, or Babinski's sign; for the present case it will suffice to determine whether it be present or not. You see, as the outer edge of the sole is irritated, that there is distinct flexion of the toes on both sides. Thus Babinski's sign is not present. Therefore, the only indication of disturbance in the motor tract, as far as the right lower extremity is concerned, is the slight spastic condition we have discovered. And the same is true for the right upper extremity. For on tapping the flexor tendons at the wrist, the head of the radius, and the tendon of the triceps, we note that the movements induced are exactly like those caused by the same stimuli applied to the left arm. Furthermore, the apparent contracture of the right side of the face is unaccompanied by exaggeration of the jaw-jerk, as is evident when I tap on the handle of the hammer pressed against the lower incisors.

If, then, a slight hemiplegic rigidity is the only evidence of disease, we must look further before deciding that it is really due to an organic cause.

You have noted the presence of a difficulty of speech and an intermittent tremor about the right angle on the mouth. Tremor of the lips and tongue and difficulty of speech are in themselves important signs of organic disease of the brain, especially indicative of paretic dementia or, popularly, paresis. Therefore we must analyze these symptoms and determine their true pathologic meaning.

The first peculiarity is that the tremor of the lips is confined to the right side, and it is a coarse tremor. I do not remember to have ever noted a distinct unilateral tremor of the lips in paresis, and furthermore the tremor in paresis is very fine and peculiarly fibrillary in character, and quite different from the coarse tremor noted here. But this symptom is enough to direct our attention to other possible signs of paresis, among which are fibrillary movements or tremor of the tongue, defective articulation, mental symptoms consisting usually in mental failure, and anomalies in the condition and reaction of the pupils. When the patient protrudes his tongue you notice a very marked tremor, though its character is not clearly fibrillary, but rather a coarse tremor involving large parts of the organ simultaneously; there is not the fine verimicular movement of the muscle fibres of the tongue so characteristic of general paralysis; rather a coarse tremor of the organ as a whole.

The defect of speech which you have had abundant opportunity to observe is to be studied critically. You note that it is characterized by initial hesitancy in the starting of a word or a phrase; that when once started the sentence is completed without great difficulty, without blurring the words or omission of syllables; that if difficulty occur in the midst of the sentence the patient recognizes it and is not satisfied until he has correctly enunciated the word. There is, then, no real defect in the formation of words or sentences, and the noticeable defect of articulation is one comparable to stuttering rather than stumbling over words and omission of syllables with unconsciousness of the defect, which is so characteristic of paresis. Indeed, the speech defect here is quite like a difficulty in writing which the patient describes. His employment requires that he note down on a slate sums varying from five to fifteen cents. He cannot readily make the curved 5, so 1 stands for 10, and he indicates the other sums by straight lines. It seems, then, that the trouble of articulation is dependent on the coarse tremor of the tongue noted, which is more marked at the beginning of speech and diminishes as the action is continued.

When the eyes are examined the pupils are found to react to light and in accommodation, and they are equal. Thus the eyes present no evidence of the disease suspected.

This analysis of the foregoing symptoms, with a conclusion that they are not indicative of paresis, would have small weight were there mental symptoms pointing to paretic dementia. But there is not the slightest evidence of mental failure. He repeats his history always with the same exactitude and his stories agree; furthermore, he is still able to continue his employment as before his illness, and he keeps his accounts with the same accuracy. His affective state betrays no mental weakness; indeed, there is no evidence of mental deterioration, which after three years would certainly have been manifest were the patient affected with a diffuse meningo-encephalitis. We may then put aside any thought of general paralysis as the cause of the patient's condition.

As the patient talks, you have already noted a peculiar monotony of intonation. Each sentence and each word is pronounced without the varying modulation of tone natural to the ordinary speaker. This probably is due to the slowness and deliberation necessary in articulation, and it may be readily compared to the fixed and unvarying expression of countenance and the deliberateness of voluntary movement in general.

Turning now to the sensory sphere, we are unable to discover any sensory symptoms. The patient is normally sensitive to touch, pain and temperature everywhere, and the so-called stereognostic sense is intact; for he readily recognizes familiar objects by the sense of touch when they are placed in his hands.

We have now excluded general paralysis, and the problem before us is to explain a general but slight

rigidity of the right side of the body by referring it to its cause, or placing the condition in some well-defined clinical group of cases.

Is there any known disease in which spastic rigidity is a prominent symptom, with absence of other signs, of course organic disease of the nervous system? We may answer immediatly that there is a common form of nervous disease, the initial and fundamental symptom of which is muscular rigidity—namely, paralysis agitans. You say at once that such a designation for the condition before you is anything but happy, and I can only agree with you. The patient is evidently not a trembler in any distinct sense of the word; and to justify such a diagnosis in the absence of tremor, additional symptoms must be sought and found.

When we ask the patient if he has any peculiar sensations while walking, he spontaneously tells us that he feels a tendency to run forward. This is the propulsion of paralysis agitans. Asked if he has any peculiar sensations at night, he says he sleeps well, but describes waking up with a sense of heat and profuse sweating over the front of his chest, and this when the room is cool and he is lightly covered, and he finds himself scratching the part. This symptom is again well known in paralysis agitans.

As the patient now stands before you, I would again call your attention to certain well-marked peculiarities of expression and attitude. The face is fixed and motionless, as if cast in a mould; the head and trunk are bent slightly forward; the hands are in a state of flexion, already analyzed in detail, as if holding a pen; the forearm is flexed at an obtuse angle on the arm, and held in front of the trunk; the arm is separated slightly from the trunk; the leg is slightly flexed at the hip and at the knee. A photograph of the patient taken at this moment would be sufficient to enable the experienced observer to make a correct diagnosis, for this attitude is almost absolutely pathognomonic of paralysis agitans.

The patient will tell you that while he often corrects this attitude, especially the position of the arms, he finds them back in the same position when his attention is distracted for a moment. He also tells us that he notes a growing difficulty in the movement of the limbs of the left side; and in the similarity of the attitude of the two sides we may foresee a later development there of rigidity, like that now present on the right side. When asked if he has pain, he describes what he calls a rheumatic pain at the insertion of the right deltoid in the humerus. I call attention to this isolated symptom, for it is often the earliest symptom of paralysis agitans; and when accompanied with stiffness not referable to arthritis, it should put us on our guard against the ultimate development of paralysis agitans.

The case, then, may with certainty be diagnosticated as paralysis agitans without tremor. It serves in this to emphasize the fact that tremor is not an essential condition of this disease; that it is badly named; and that since the fundamental and essential symptom is muscular rigidity, we should find some other word to designate it. For this reason it is preferable to call it Parkinson's disease, after one of the first observers to describe it.

There is not now time to discuss the disease in all its symptomatic details, nor to enter into a critical examination of its doubtful pathology and unsatisfactory therapeutics. It will suffice to say that Parkinson's disease is often monoplegic or hemiplegic in distribution for long periods before both sides are involved; and now that the patient is dismissed I may say in conclusion that the prognosis is unfavorable as to cure; our efforts can only be directed to ameliorate the patient's condition.

The number of international medical congresses to be held in Paris during the coming summer is legion. Of course, the anti-vaccinationists and the anti-vivisectionists are to be represented in this list; but one of the striking of the newer movements is contained in a circular of the Société Contre l'Abus du Tabac, which will endeavor to organize an international discussion of all the hygienic and social questions pertaining to the use and abuse of tobacco.

It is reported that a proposed meeting of railway surgeons which was to have been held in Warsaw, Russia, was indefinitely postponed. We can hardly think of any other reason than that the railway surgeons were suspected of some deep and dark plot against the government. If these Russians would only come to this country they could enjoy a meeting of railway surgeons every week. The list of these includes a large number of State and local railway associations, as well as the two national bodies, one the Association of and the other the Academy of Railway Surgeons.

A cotemporary suggests that poison labels be attached to all bottles containing poisonous substances. Not only should the label declare that the substance contained in the bottle is poisonous, but it should contain an account of the chief symptoms, and should not omit some description of the terrible suffering caused by many poisons. There is a general conception in the public mind of poison bringing a rapid and apparently painless death. Such is not the case with the great majority, many of which have been employed extensively of late with suicidal intent. It is generally believed that the enormous number of suicides by carbolic acid would be diminished if packages of this substance contained some account of the tortures endured by those who take the drug before death comes to their relief.

Correspondence

A ST. LOUIS HOSPITAL FOR TUBERCULOSIS.

A special hospital for the treatment of tuberculosis in St. Louis is now assured. The Sisters of St. Mary, who have been so successful in conducting other large hospitals and infirmaries, have secured a fine tract of land on the heights between the city and Jefferson Barracks. In addition to some excellent modern buildings already erected, they will build a large sanitarium on the cottage plan.

This is a new undertaking in hospital work in the West, and it has not been started without careful thought and every assurance of success. Sanitarium treatment has proven its value, and many physicians are advocating it beyond all else; for after all it includes all else. "Change of climate" has not given the results expected of late, and the truth is that the Mississippi Valley is not as inimical to lung repair as has been asserted for so long.

Of the four States to which most of the lung cases are sent, Colorado had last year a death rate per thousand of 1.18; California, 2.39; Texas, 0.92; North Carolina, 1.37—or an average for the four most noted States of 1.46. In Missouri the rate was but 1.32. It is true that the rate is influenced by the number of consumptives who go to the resorts in these States, but the death rate shows that more of these climate seekers die than those who stay at home. Further than this, the death rate in Missouri from tuberculosis is less than any State of its size, and less than the average rate of all the States and Territories. The average of fifty States and Territories is 1.38, while Missouri has 0.06 less.

These official figures should have some influence with the chronic complainer of all that pertains to climate and environment about us. They also prove the wisdom of Flint and other eastern physicians, so far as choice of climate was concerned, when they sent their tubercular cases to the prairies of Illinois and the uplands of Missouri. But that climate is not the most important consideration in these cases is suggested by the fact, that while New York has the largest death rate from tuberculosis in the United States, New York has also the Loomis Sanitarium, which records seventy per cent. of cures of tubercular disease.

These facts and the further considerations, not only of providing proper treatment and care, but of removing the danger that these cases are to others, were the incentive to the action taken by the Sisters of St. Mary. They have been encouraged by a number of prominent citizens, and by the very decided expression of public favor. New buildings on the cottage plan will be begun at once, and every modern method of value employed. Special attention will be given to graduated exercise, inhaling rooms, and a rarified air chamber will be fitted up, and in the spring a pavillion without sides will be built and furnished with plain cots for the open-air treatment.

The medical staff will be composed of men who will be pledged to give to the work their best care and thought, and the Sisters will afford them every opportunity to make the result of that work to compare favorably with the results obtained in the sanitaria of other countries.

WILLIAM PORTER.

Notes and Items

The Practitioner's Society of Dallas was organized on December 1st and the following officers elected: Lawrence Ashton, M.D., President; J. B. Titterington, M.D., Viee-President; C. L. Johnson, M.D., Secretary. The next meeting will be held on Monday, December 18th, 1899.

It has been decided in the case of the German Hospital of New York, that its funds being a pure charity cannot be taken in compensation for alleged malpractice. The court in deciding this question said that it was in effect a diversion of this trust money from the object for which it was originally intended.

An exchange is authority for the statement that women have at last received recognition as practitioners in Germany. It is said that one Agnes Nacker has been admitted to practice; she will reside in Berlin. Her case has been under consideration by the Prussian cabinet for the past two years, and has finally been decided in favor of granting her a license to practice.

Until quite recently no women pharmacists were to be found in Paris, but of late two women, graduates of the Paris School of Pharmacy, have opened shops in the French capital. One, Mme. Maitre, has an office in the Boulevard Mont Parnasse, while Mme. Fictenholtz has her shop in the Rue de la Tour, not far from the Exposition. It will be interesting to American visitors to learn that this pharmacist speaks English fluently.

A movement is on foot at Asheville, having its origin in the medical profession of that city, for the establishment of a national park in the mountainous regions of Western North Carolina. It is pointed out that there is no national park in the Southern States, and it is said "the country has given millions to the development of the great Yellowstone Park, with its curious formations and freaks of nature and its dreary grandeur." A reference is made to the importance of establishing a park in the Blue Ridge Mountains, in the effect it would have on forest preservation, as well as its value as a residence for tubercular and other patients. The physicians of Ashe-

ville invite the co-operation of the profession of the entire country in aiding them to establish this national park.

"Le Mal Necessaire" is the title of a recent French novel, which depicts the life of a talented young Paris surgeon, who is impecunious and always in need of funds to keep up an unduly extravagant life. To supply the money, he operates right and left, regardless of everything except the purse of his patients. The chief interest in the story is said to center in the psychologic study of the assistant of the surgeon, who is an honorable man. The story is dished up with all the concomitants of modern French fiction. We wonder if the counterpart of this surgeon could be found in this country.

It is proposed to establish in Birmingham, England, a medical consultation bureau, by which consultants will be furnished at one-half the regular fee charged in England. The company that has this matter in charge proposes to employ a surgeon and physician, and pay them a salary of five hundred pounds per year, charging the patient for their services ten shillings sixpence. The usual fee for consultation in England is a guinea, or twenty-one shillings. The company promoting the enterprise hopes to make money out of the physician by paying him a salary and collecting his fee. The movement has been met by the physicians. They have held a meeting and agreed to visit those in moderate circumstances for one-half of the regular consultation fee.

Dr. L. L. Seaman of New York, who has devoted considerable attention to the subject of dietetics, especially as applied to troops serving in the tropics, makes the assertion that the large number of deaths which have occurred among the troops in the Philippines is due to an improper diet. This is responsible for the intestinal troubles, which have played the most important rôle in the mortality of the troops. He emphasizes the incongruities which we have repeatedly pointed out in these columns, of supplying troops in tropical countries with the same rations that would be suitable in Alaska. He compares the rations of the troops in India, which contain less meat, less bread, and more rice, and yet is pronounced by the best authorities in England to be not well adapted for troops serving in the tropics.

Brandeth Symonds enters a plea for undergraduates' instruction in making life insurance examinations. He says that this is an important part of the physician's work, and nearly fifty thousand physicians in the United States, which is not far from half of the total number, are employed in this work. In fees, nearly five million dollars are annually distributed. There are but two medical schools in the country that offer systematic instruction in this subject. A course in this topic, in his opinion, should include: (1) Some instructions in vital statistics and the fundamentals of life insurance; (2) the relation of the company and the applicant; (3) the facts surrounding each disease which are important from a life insurance point of view; (4) habits, occupation and environment; (5) the family record and heredity; (6) the physical examination, particularly with reference to the distinction of essentials and non-essentials; (7) the relation of the examiner to the agent; (8) frauds and fraudulent practices.

At the last meeting of the American Public Health Association a paper was read describing the home for lepers in Louisiana. It is said to be not less than a half-mile from other habitation. It has extensive grounds, with large orchards and gardens, and is surrounded by a high fence. Beyond this the leprous patients may not go, but they are provided with a high platform to which they may ascend, and from which they can view the outside world. It is surprising what extraordinary efforts are made in the segregation of lepers, and what a panic is excited in the public mind by the statement that one of these unfortunate individuals is at large. It is well settled that leprosy is much less contagious than tuberculosis, and that it pursues a less rapid course. It is not so easily transmitted from one to another as syphilis; and while it is regarded as a "loathsome" disease, we question if it is more so than lupus of various forms of cancer. Contagion has a very limited influence in propagating the disorder. There can be very few cases of leprosy in a community in which sanitary laws are observed and where personal habits are cleanly. In view of such facts, the high platform and the fences seem needless precautions.

In the Review of November 25, 1899, we called attention to the importance of a knowledge of internal medicine to the army surgeon. The care of sick people, ill from the various infectious diseases, in which diarrhea and fever play an important part, is really the chief business of the medical man with troops in the field. Perhaps it is more important that he be skilled in hygiene and the prevention of infectious diseases. That would place the order of his accomplishments as: first, hygienic; second, medical; and third, surgical. The importance of this is shown by the criticism of Osler on the medical service in the home camps during the late war with Spain. There was a failure on the part of the medical officers to recognize that a continued fever of a number of days' duration, which did not yield to quinin, was typhoid. It was not until the epidemics of this disease obtained secure footing and a large number of troops had been stricken with the disease that it was recognized as typhoid fever. It is probable that during the late war with Spain nine cases of infectious disease were treated to one of gunshot wound; hence the necessity of changing the title of military surgeon to that of military physician.

MEDICAL REVIEW

A WEEKLY JOURNAL OF MEDICINE AND SURGERY

EDITED AND CONDUCTED BY

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ANTITOXIC GLOBULINS.

Ever since the introduction of serum-therapy the well-known side-effects of the injections have formed an objectionable feature of this treatment. Although alarming sequelæ have only in the rarest cases been brought about by them, and although they are only observed in a very small percentage of the total sum of the cases treated, to many minds the possibility of their occurrence still contraindicates the use of antitoxic sera. Leaving aside the question whether or not in a matter of life or death we ought to incur the risk of such a possibility, we now know fully well that it is not the antitoxic property of such sera which produces the symptoms, but that the latter are due to certain "toxic" principles present in the serum of normal animals; the nature of these substances just now is beginning to be unraveled by a number of highly interesting investigations. We can gather that much from the latter that the toxicity of the heterologous sera asserts itself in a dissolution and sometimes agglutination of the red blood-corpuscles of the animal into which they are injected. In this way a rabbit can be killed by the injection of 5 to 7 c.c. of normal cow's serum. The toxicity of the various sera for the different species of animals, of course, varies greatly; as far as we know, the serum of horses is one that exhibits this property. As far as normal human beings are concerned, to only a very slight degree, although under certain pathologic conditions (tuberculosis), even normal horse serum may prove to be exceedingly irritating.

The chemical properties of these toxins (hemolysins, etc.) are as yet very obscure. We must, however, accept the suggestion that they exist as separate substances, held in solution by the serum. We know of them, furthermore, that they are easily destroyed by higher temperatures, a short heating of the serum to 50–55° C. usually being sufficient to eliminate them perfectly. This temperature does not exert a deleterious influence on the antitoxic quality in any noticeable degree.

The first attempt to deprive anti-diphtheria serum of these principles was made with the method of SPRONCK, who heated the serum for half an hour at 55° C. Unfortunately, this method did not prove in all cases successful. It failed sometimes for the following reasons:

The hemolytic (toxic) action of the serum results from two factors, a specific body which combines with the heterologous erythrocytes and a ferment-like substance which has a specific affinity for the first, and by its means transfers its digestive (dissolving) activity to the red cells. It is only the latter that is destroyed by heat, while the erythrocyte-binding principle (zwischenkoerper of EHRLICH) remains undisturbed. The enzymotic action of any fement, however, is determined by the presence of a substance, the molecular structure of which fits the structure of the ferment. In the absence of such a substance any ferment is doomed to remain inert. If, therefore, the ferment is destroyed (and these ferments are, in an exclusive way, of a specific nature), the chances are that in the body of another animal the erythrocyte-binding substance will not find a homologous substitute; a fermentative (digestive or dissolving) action of such a heated serum will therefore not be observed. In rare cases as an accidental concurrence it may happen that the blood of the animal, into which the heated serum was injected, may contain a homologous ferment (the existence of such cases has been incontestably proven), the consequence of which must be that the globulicidal, etc., action is set. Hence the serum side-effects with heated serum.

Other investigators have attempted to isolate the antitoxic principle; they all have failed. Still a certain advance has been made beyond the statement of BEHRING, that the antitoxic potency in immune serum is an inherent quality of the normal protein substances of the serum, by the discovery that this quality is confined to the globulins of the serum, whatever these globulins may be. This we have known for several years, and the investigations of the Research Laboratory of the New York State Board of Health, to which we referred in a late issue of this journal, have brought forth nothing absolutely new. On the contrary, for some years methods have been based on this fact to concentrate the serum and so reduce its principles into as small a bulk as possible, and several such preparations are on the market. There is not as yet sufficient experience to show whether the obnoxious substances can be entirely eliminated, but the great gain of this method is that the antitoxic potency in this way may be preserved unaltered and unchangeable.

To penetrate deeper into the mysteries of the antitoxic function of proteids will be impossible for some

time. It is the very researches on this subject by FREUND, STERNBERG, and SENG, in Vienna, that have again shown the absolute insufficiency of our chemical knowledge about the constitution of proteins. Where even the rougher outlines of a problem are still so little defined, we cannot hope to arrive at the understanding of so labile a function of living matter as is the antitoxic function. And in this connection, with redoubled emphasis, we wish again to call attention to the biologic method followed by Ehrlich and his school, who have succeeded in unveiling mysteries of organic life that formerly seemed to be altogether out of reach of our conceptions.

HORSELESS VEHICLES FOR PHYSICIANS.

Automobiles for physicians are coming into quite extensive use in England and upon the Continent. Many of the English have adopted the term "autocar," which is certainly an improvement upon "automobile;" it is at least half English. This class of vehicles is commonly spoken of in England as cars, a name which leads to no confusion there, but which will lead to some uncertainty because of our almost universal use of the word in this country. In England street cars are called trams, while railroad cars are known as vans if they are for the transportation of goods, and as wagons if they are meant to convey passengers.

DR. CHARPENTIER of Uxbridge gives his experience with an autocar, which he had used for nearly a year. He compares the cost with a two-horse trap; and while the first outlay of capital is somewhat greater for the autocar, the difference in the keeping, as compared with horses, is, of course, very much in favor of the latter. The item in repairs has been considerable in the autocar. The sum total of expense is about three times as great as for the horse-propelled vehicle. The car which he has used for the past year has been driven over five thousand miles, in all weathers and over all kinds of roads. The great advantages of the autocar over horses has been speed, readiness, and endurance. In favor of the autocar, he states it does not shy or bolt, or catch chills, and there is no anxiety about "saving the horses as much as possible."

A SANATORIUM FOR TUBERCULOSIS IN ST. LOUIS.

Elsewhere we publish a communication from Dr. William Porter referring to the establishment of a sanatorium for consumption in St. Louis.

Besides providing a place where tubercular patients may receive treatment entirely in accord with modern therapeutic requirements, such an institution fulfills a necessity which for years has been apparent. Whereas a patient suffering from almost any disease other than diphtheria, small-pox, etc., is acceptable by most hospitals, a grudging welcome, if any, is as a rule given to the consumptive. When he is admitted he often finds slight response to his complaints, and he soon learns that his presence is undesirable, to say the least.

The conditions which exercise a favorable influence upon these cases are usually absent, or whatever may be at hand are entirely inadequate.

The result is that with all our boasted progress we must admit that the consumptive cannot be greatly benefitted by a residence in such institutions.

Properly conducted sanatoria, with the care of tuberculous cases made the sole or paramount purpose in their establishment, have a much better function. The Congress for Tuberculosis which met in Berlin four months ago demonstrated the usefulness of the sanatorium in tuberculosis therapy, and gave it an impetus which will be lasting and productive of good results.

The sanatorium plan gives the newer therapeutics an opportunity to exercise a power for good—such as sero-therapy, creosote, ichthyol, exercise, baths, sunshine, tuberculin, and the like.

Let the good work go on.

MORPHIN HABIT AMONG PHYSICIANS.

We recently called attention to the prevalence of the morphin habit as set forth by Dr. Crothers, in a paper read before the New York State Medical Society. In the National Hospital record we find a quotation credited to a New York paper: "Statistics show that the medical profession are more prone to suicide than any other. During the last three years the number of suicides occurring among physicians was twenty-five to every one thousand. It has been suggested that an explanation of this tendency may be found in the development of morbid fancies in the mind of the doctor on account of his constant association with the sick and dying, or because he has the knowledge of how to die painlessly and conveniently." It is stated that a medical journal dissents from these views, not as to the number of suicides among physicians, but as to the causes which lead to them. In the quotation as given, it is not shown whether the proportion of suicides among physicians is on the whole number of living or on that number of deaths; that is, of one thousand physicians that die twenty-five commit suicide. If the latter, the figures are probably not far from correct; but, as the statement stands, the inference could be drawn that twenty-five out of each thousand living physicans commit suicide each year. Such enormous figures are, of course, absurd, as the rate of twenty-five in a thousand would give a comparatively high mortality among physicians from all causes. We merely quote the above as an example of the loose kind of statements which are found in medical publications, and from which wholly unjust inferences may be drawn.

Society Proceedings

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

MEETING OF OCTOBER 20, 1899.

DR. A. B. JUDSON read a paper on

The Pathology and Treatment of White Swelling of the Knee.

He said that with the scientific progress of the day great changes were taking place in our knowledge of disease. Although pathology took the precedence in medical studies, she was a fickle divinity. We learned, but with the prospect of having to unlearn; and the all-wise, unwise public sensed this, and when in dire straits went doubtfully away "trembling, hoping, lingering, flying" to fanes where the divinities were not only fickle but meretricious. In white swelling of the knee, however, it was sufficiently established that use of the inflamed joint aggravated and prolonged the disease. Arrest of motion and cessation of weight-bearing necessarily followed as a part of rational treatment. He described apparatus and presented the following patients:

Case I. A girl, seen in September, 1899, aged 6½ years. Early diagnosis. No pain. Slight muscular atrophy and swelling of the knee. Flexion, 20° to 170°. An asymmetrical gait had been noticed for about five weeks. When told that a child was threatened with Pott's disease, Dr. Fayette Taylor said: "The house is on fire or it isn't on fire." In the present case the occurrence of signs which, though slight, were well defined, established the disgnosis of osteitis. An ischiatic crutch for the protection of the limb from the weight of the body was applied. If resolution did not follow in a few weeks a fixative brace would be added.

Case II. Boy, November, 1897, aged 4 years. Duration of disease one year. Flexion, 20° to 125°. Ischiatic crutch was applied and five months later a fixative brace. Pott's disease appeared in the lumbar region and a spinal brace was applied in December, 1898. Knee at two degrees or practically straight. Prognosis favorable. Apparatus worn with ease and convenience.

Case III. Girl, January, 1897, aged 5 years. Duration three years. Subluxation was present. Severe pain. Flexion, 55° to 125°. Apparatus applied March, 1898. Abscess appeared, but had been absorbed. Subluxation persists, but the femur is superimposed so far over the tibia that the stability of the limb would not be impaired. Knee is at 6°. Prognosis good.

Case IV. Boy, August, 1895, aged 1 year and 9 months. Duration a few weeks. Knee at 90°. Swelling and severe pain. A year later destruction of the bone was far advanced, with sinuses on all sides of the knee. Subluxation. The fixative brace was applied, with relief of pain, and six months later the addition of the ischiatic crutch restored the child to activity. Prognosis good. Sinuses closing. Knee at 10°.

DR. W. R. TOWNSEND said that thorough surgery would do a good deal for the patient. The knee was septic, and although children tolerated pus better than adults, some day a general sepsis would appear and the child would lose its life.

DR. JUDSON said that long and frequent absences from the dispensary had marked the history and had delayed recovery. It was probable that other advice had been freely sought. If the general condition was good at the time it might have been said either that mechanical treatment should proceed, or that an operation would be well borne and would hasten recovery. If the condition had been bad, as it was at times in the extreme, an operation might have been urged to save life, or postponed on the ground that the chance of recovery was too small. The patient had escaped the loss of bone by operation, and the result would be recovery with greater straightness, length and stability of limb than could be hoped for after an operation.

Case V. Girl, January, 1889, aged 3 years and 7 months. Duration six months. Marked flexion. Fixative brace and ischiatic crutch applied. Flexion entirely reduced. Three abscesses appeared and in due time the resulting sinuses cicatrized. In October, 1894, motion was between hyperextension 5° and flexion 30°, and treatment was suspended. Four years later flexion was found to have returned, with motion 28° to 48°. No symptoms. Fixative brace reapplied with reduction to 10°, with prospect of complete reduction. When the bones were mature, their articular surfaces would have adapted themselves to each other without flexion, so that the femur would rest securely on the tibia in the straight position.

Case VI. Girl, February, 1896, 10 years. Duration 3 years. Knee flexed at 35° after excision. Fixative brace applied. Flexion had been reduced to 20°, but had relapsed to 30° from a failure to inspire the patient and her friends with enough confidence in the usefulness of mechanical means to lead to the necessary attention to the details of treatment.

Case VII. Girl, August, 1895, 3 years of age. Flexion at 22° after operation on the bone. Fixative brace applied. Flexion entirely reduced. Prognosis good.

Case VIII. Boy, January, 1893, 7 years 6 months. Duration 18 months. Previous treatment by a splint protecting the limb from the weight of the body and a plaster of paris dressing. Fixative brace and ischiatic crutch applied. Patient was presented to the Orthopedic Section April 20, 1894. Crutch removed September, 1896, and brace January, 1897. Flexion 8° to 75°, with no defect in his ordinary gait.

DR. TOWNSEND said that synovitis was present with

effusion and that he would continue to give support, as absorption, which was desirable, would be doubtful if the boy was permitted to run about.

DR. G. R. ELLIOTT said that this case of chronic hydrops presented quite as high a degree of atrophy as those in which the bone was unquestionably involved.

DR. JUDSON said that the presence of synovitic effusion had been early recognized, but had not reversed the diagnosis of osteitis.

DR. ELLIOTT said that the other patients also presented a high degree of atrophy above and below the joint. The merest tyro was familiar with the sudden atrophy of developing tubercular joint disease, the cause of which was still far from being demonstrated. How could we differentiate atrophy due to disease from that due to bone disease? Atrophy in the great number of doubtful cases commended itself to us as a puzzling sign, whose many expressions could not as yet be interpreted.

Case IX. Boy, March, 1891, 14 years. Duration since infancy. Swelling and limitation of motion. Flexion 25° to 55°. Two years after application of the fixative brace the knee was straight, and 18 months later hyper-extended 10°. Treatment was suspended January, 1896. Almost perfect ability in walking. Flexion 0° to 20°.

Case X. Boy, February, 1885, 8 years. Duration 4 years. Marked subluxation. Flexion 30° to 80°. Sinuses. Thomas's splint for protection and a fixative brace March, 1885. Presented to the Section March 19, 1886. An ischiatic crutch in place of Thomas's splint January, 1887. Knee hyperextended 2°. Sinuses closed. Ischiatic crutch removed March, 1890, and fixative brace was occasionally worn until July, 1895. On presentation flexion was 25°, a result due in large measure to failure to secure due attention to treatment at home.

DR. TOWNSEND said that, although there was considerable deformity, there was a useful limb. The absence of motion was an advantage, as with motion he would not walk so well.

DR. JUDSON said that gradual, painless and complete reduction of flexion should have been well within the power of a simple lever, such as the fixative brace, and the ability of the limb to uphold the body would have been thereby increased. He did not object to the presence of motion if the knee were capable of full extension. In the absence of motion, ability to walk well after recovery would be increased by raising the shoe of the unaffected side by adding to its sole and reducing the thickness of the sole on the affected side.

DR. H. L. TAYLOR compared tuberculosis of the different joints. He thought that the chances of a good result were better in white swelling of the knee than in hip-joint or spine disease. The knee was more exposed to view and more easily examined, handled and controlled. In the stage of acute exacerbation from synovial inflammation, when extreme tenderness and suffering made it impossible to move the patient, and when anodynes were powerless, a surprising degree of immediate comfort followed immobilizing the knee and at the same time applying counter extension.

DR. R. A. HIBBS said that many patients do very well with no perineal support and showed a remarkable degree of ability on the part of a badly diseased knee to bear the weight of the body. He thought the prevention of lateral as well as antero-posterior mobility was the important element of treatment, which had not been provided for in the apparatus which had been exhibited.

DR. JUDSON thought that he would be at a loss to know how to treat this affection, or osteitis, in any of the large joints of the lower extremity without perineal support, on account of the enforced rest which it brought to the joint. The apparatus had been said fancifully, but with a good deal of truth, to put the limb to bed while the child ran about. He did not wish to give up the thought that these diseases were almost entirely absent from the upper extremity for the reason that the arms were exempt from carrying the corporal weight.

DR. J. J. WALSH said that in one of the patients the pelvic band, where it rested against the body in front, appeared to make pressure which might prove to be injurious.

DR. JUDSON said that if the perineal, or ischiatic, strap were too short the pelvic band would fall against the tubes, and if the strap were too long the band would strike the anterior superior iliac spine; but if the strap were of the right length the pelvic band would be held by it at such a level that it would simply make harmless pressure on the abdominal wall. The pelvic band might serve its purpose even if it did not touch the skin at all, as its only function was to furnish a support on which to hang the perineal strap, which is in effect a crutch-head applied under the leg instead of under the arm.

DR. TOWNSEND said that the straps crossing the front of the limb might interfere with the circulation and even produce synovitis by pressure on the synovial sac, or cause atrophy of the quadratus femoris muscle and tendon, and thus interfere with the use of the limb after recovery.

DR. JUDSON said that it was common enough in orthopedic work to compromise the welfare of the soft parts for the safety of the skeleton, but serious mischief was very rarely done in this way. The straps of the fixative brace were efficient and comfortable when used simply to arrest undue motion, as strong pressure was unnecessary for this purpose. When an old deformity had to be reduced, however, more pressure would be required, and it was always easy to avoid doing harm with the assistance of the Yankee in-

genuity which was believed always to reside in an orthopedic consulting room, and by relying on slow and gentle methods. This affection was one of the worst that could attack the skeleton of a child, and a result should be considered commendable if the limb were strong and straight and useful, albeit motion might be limited or absent from the joint.

Diagnosis of White Swelling of the Knee.

Dr. Elliott recalled the case of a young woman affected with traumatic synovitis of the knee. Pain, muscular atrophy, uniformity of joint swelling, and spasm simulating reflex spasm, had persisted for several months. Excision of the joint had been advised and treatment for tubercular joint had been given. The symptoms had, however, given way to complete recovery, with normal limb and joint after massage, compression and mechanical support. Another woman, 20 years of age, had been treated, without relief, by fixation and extension, as for a tubercular knee joint. The tumor increased to an enormous size and became irregularly nodulated and the pain was excessive. It was an instance of round-celled sarcoma, and the patient died eight months after the onset.

Dr. Judson said that semi-fluctuation was an important sign in such cases, caused probably by the presence of a number of deeply-seated collections of fluid.

Dr. C. A. Elsberg said that syphilis and chronic gonorrheal rheumatism affecting the knee sometimes simulated tubercular disease, and especial attention should be given to the differential diagnosis of tuberculosis and hemarthrosis of the knee. A joint slowly filling with blood resembles in many respects a tubercular joint. There were fluid collections, deposits of fibrin, possibly erosions of cartilage, infiltrations of peri-articular tissues, a gradual and insidious invasion, and a very chronic course. Two instances had come under his observation. In the case of a boy two years of age, a tentative diagnosis of tuberculosis of the knee had been corrected three or four weeks later by a further examination induced by the occurrence of hemarthroses of three of the finger joints. It was found that in the history of the family the male children of a number of healthy mothers had been hemophiliacs.

Dr. Hibbs recalled a case in which pain for two weeks and inability to walk had led to treatment by a plaster of paris dressing for knee joint disease in a boy five years of age. Four months later the patient was seen again and was found to have infantile paralysis, having been in the hyperesthetic stage when first examined.

Dr. Taylor had seen infantile paralysis mistaken for acute rheumatism and for hip disease.

Dr. Townsend had mistaken a sarcoma for an osteitis of the head of the tibia in a woman 21 years of age. The growth of the tumor was slow and the swelling not more than he had seen in osteitis. There had been no pain. After eighteen months he had operated to remove the local condition. A blackish mass, mostly clotted blood, was revealed and the nature of the case was recognized. As much of this bone as possible was removed. A year later the wound had closed, and recurrence having taken place amputation was done three years ago. An artificial limb was applied and the patient was well, with no signs of a return.

Dr. Elliott said that the course of the disease had been remarkably slow. Twenty-seven cases of sarcoma of the lower end of the femur had been collected. Most of them ended fatally within two years, even after amputation. The myeloid type furnished the cases of longest duration, while the round or spindle-celled variety led to rapid fatality.

Operative Treatment of White Swelling of the Knee.

Dr. Townsend said that mechanical treatment was, as a rule, so successful that operations were rarely necessary if the treatment was begun early. Ligaments and soft parts, when much diseased, should be removed by arthrectomy, free incisions being made, sometimes on both sides of the knee, with the simultaneous removal of diseased bone by the curette. The results of arthrectomy were very good and a movable knee should be expected. The excision of sinuses was probably the easiest way to get rid of them. The more complete operations of excision and amputation were rarely indicated. The former should rarely be done in children because it was very likely to be followed by flexion or knock-knee, and because the inevitable shortening would be excessive when the patient grew up. In a very bad case excision did not go far enough; in a mild case it was too radical. Amputation at the lower third of the thigh was a recourse in sepsis when the removal of all damaged tissue by arthrectomy or excision was impossible. An abscess, as soon as detected, should be opened and cleaned out, and if possible the diseased focus in the bone removed by the curette. Many patients would thus be saved from sepsis and a movable joint secured instead of a stiff one. Thorough aseptic precautions should be observed and communication of the abscess with the joint cavity should be avoided in operation, and spontaneous communication prevented by operating early. A septic joint should be freely evacuated, and as a thorough cleaning out was necessary, and as through and through drainage was often unsatisfactory, an incision should be made across the knee in front and washing out conducted after lifting up the patella. Amputation might thus be avoided in cases of streptococcus inflammation. If this failed, resort might be had to amputation. In a boy aged 9 years, who was thus treated, amputation soon reduced the

pulse from 148 to 112 and the temperature from 104° to 98.5°, and healing by the first intention and perfect recovery followed.

DR. ELLIOTT asked whether opening all abscesses should be the rule.

DR. TOWNSEND said that an abscess showing signs of infection or a tendency to burrow should be opened. Abscesses about the knee joint, containing simply the products of tubercular inflammation, might not demand immediate evacuation; but as the large majority of them burrowed or became infected, he was in favor of opening them all.

DR. ELLIOTT said that the presence of mixed infection should decide the question. The proper course lay between the two extremes of opening all and not opening any of the abscesses of chronic bone or joint disease.

DR. HIBBS asked for the diagnostic signs or symptoms of mixed infection.

DR. ELLIOTT said that increase of tension, tenderness increasing with edema, and frequently redness—in short, the signs of so-called inflammation—were certain indications of mixed infection.

DR. TAYLOR said that there would be little need of operative surgery if these cases were seen early. Excision would be performed much less frequently in the future than it had been. Sometimes a good operation in the adult; it should be very seldom done in children.

DR. TOWNSEND would emphasize two points: 1st, the more thorough and careful our mechanical treatment the less frequently would we operate; and, 2nd, if an operation was necessary it should be promptly and thoroughly performed.

Much enthusiasm was expressed when Sir William McCormac, together with Mr. Makins, sailed for the Cape. They had a magnificent "send-off" at Waterloo Station. Nearly three hundred students, chiefly from St. Thomas' Hospital, were present to do honor to these great teachers and masters of surgery, who have so unselfishly sacrificed their incomes to offer their services for the public weal. A correspondent for the *Medical Record* states that Mr. Treves had sailed some time before, and that these three great surgeons were to receive five thousand pounds, with allowances, each for their services, per annum. The British public are to be congratulated upon having such eminent surgeons, and for their sacrificing their personal comfort for the public good. A salary of $25,000 a year, with allowances, ought certainly to be sufficient to keep them from actual want while in the colonies, even though it is but a feeble reminder of the sum which they habitually receive while attending to their duties in the London hospitals.

Current Medical Literature

GYNECOLOGY AND OBSTETRICS.

Extirpation of the Uterus, Its Appendages, Tumors, Etc., Without Ligatures or Retention Clamps.—NEWMAN.* The object of the author's angiotribe is to produce hemostasis and at the same time do away with foreign bodies, such as ligatures, in the operative field. The clamp is gradually taking the place of the ligature in rectal and gynecologic surgery and possesses over it the following advantages: 1, immediate and absolute stasis; 2, perfect asepsis; 3, an undisturbed stump, no bunching of the pedicle or dragging upon neighboring structures; 4, the operation field is free from foreign bodies; 5, promptness of execution and adaptability to nearly all tissues and surgical work. The author cites several cases and the satisfactory results obtained in each.

Pyelonephritis of Pregnancy—C. B. REED† reports a case of this relatively rare disease occurring in a woman 26 years old during the second pregnancy. After the birth of the child improvement was pronounced and the patient recovered fully within one year. The time of attack in cases reported has been in the middle and latter months of pregnancy, with a predilection for multiparæ. The pathology is determined by two factors: 1, the ureteral compression, which results in stagnation of urine and to a certain extent prepares the way; and 2, the infection which easily occurs when this condition is present, together with fatigue, overwork, cold, and constipation. Compression of the ureter doubtless occurs under other abnormal pelvic conditions, but how frequently has not been determined. Statistics show that the right kidney is more frequently involved, possibly due to the normal inclination of the uterus to the right, which is intensified in pregnancy. The lesion is usually primary in the pelvis of the kidney and ureter, developing through the intervention of the circulation, blood, and lymph, and the bladder may be infected secondarily. The onset usually is sudden, sometimes accompanied by chills; pulse is rapid; the temperature rises even to 103°; there are general constitutional symptoms; shooting pains appear in the back and side and radiate from the lumbar region down the groin. The urine is at first scanty, dark, and slightly albuminous, distinctly acid, and when allowed to stand a deposit of pus usually occurs. Examination of the kidney region usually shows the kidney enlarged and the presence of considerable muscular resistance. The pyuria fluctuates and does not disappear until the patient recovers. The disease lasts from 8 to 14 days and rarely terminates fatally. The effect on the child, if the disease is of brief duration, is not injuri-

*Jour. A. M. A., Dec. 9, 1899.

†Phila. Med. Jour., Dec. 9, 1899.

ous, but as the weeks go by the mother as well as the child becomes emaciated and fetal death may occur. The object of treatment should be to relieve pain and combat the infection in the urinary and alimentary tract. When labor occurs or is induced the condition of the mother will not permit labor to be prolonged, and forceps or version must be employed under strict antiseptic precautions.

Report of a Case of Membraneous Dysmenorrhea.—R. E. Coughlin* reports a case occurring in a virgin. The woman was 31 years old, well nourished, not neurotic, with no uterine disease or displacement, and gave a history of painful menstruation without the discharge of membrane previous to this attack. She has remained free from any subsequent attacks. After menstruation had been going on for eleven days, with some pain, which generally occurred at each period, the patient was compelled to give up her work as laundress on account of intense pain and profuse hemorrhage. The pain increased in severity for one day, when a mass was discharged through the vagina. This mass resembled the early decidua in every respect, and, like it, was a triangular-shaped sac with three openings, rough and irregular on the outer surface, smooth on the interior. After the discharge of this sac the patient gradually improved; in a few days menstruation ceased and recovery was complete.

Abdominal Hysterectomy at Seventy-Nine.—J. F. Baldwin† performed hysterectomy in the usual way for sarcoma of the fundus. The patient was 79 years old; her general condition was good; there was no arcus senilis nor any evidence of atheromatous degeneration of arteries. The disease was progressing slowly, but was giving a great deal of pain. The patient's convalescence was absolutely uneventful, and she left the hospital three weeks from the day of operation.

The Repair of Old Lacerations of the Pelvic Floor.—Harris.‡ The text-books on anatomy are defective as to their descriptions of the female perineum, and as a result of this fact the surgery of these parts is likewise often defective. The author goes into detail concerning the anatomy of the pelvic floor, and points out the logical deductions to be drawn and the principles to be employed in the surgical procedure. The lacerations are divided into three classes: 1, those involving the muscles of the pelvic floor; 2, those involving tissues between the lower end of the rectum and vaginal opening, external to the muscular layer; 3, a combination of these two. Elaborate classifications found in some text-books are confusing and without importance. The Emmet operation, and others based on like principles, fails to restore the real pelvic floor. The author then describes his method, which involves a resection of a portion of the puborectalis muscle, and a consequent shortening of the pelvic floor. The results have been highly satisfactory. The original opening through this procedure is carried outward, the perineal flexure of the vagina returns, the sagging of the posterior wall of the vagina is lost, and the muscles retain their elevating and sphincteric action.

*N. Y. Med. Jour., Dec. 9, 1899.
†Phil. Med. Jour., Dec. 9, 1899.
‡Jour. A. M. A., Dec. 9, 1899.

HYGIENE AND BACTERIOLOGY.

On the Manner of Tuberculous Infection.—Volland* brings forward a new idea in the infection of tuberculosis, which is very different from the theories of Cartiet, that of the dried dust, and from that of Flugge, that of the moist particles, modes of infection. The author notes the fact that scrofulosis is generally found in the first to the fifth year of life. During this period the child is mostly on the ground. From this the conclusion is drawn that the cause of scrofula lies in the dirt and dust of the floor. This first infection forms the starting point for the later development of the disease if the soil is fertile enough. This explains the frequency of tuberculous lesions, which are stationary, in post-mortem examinations. From this it follows that as a prophylactic measure floors should be kept dry and clean. If scrofula is prevented, then infection from tuberculosis will be.

Milk as a Carrier of Infection.—Probst† calls attention to the innumerable dangers accompanying the adulteration of milk, accidental and voluntary, and recommends as a cure for the evil more rigid rules and regulations on the part of municipal and federal authorities. Frequent inspection of dairies and milk producers' farms should be made by competent officials. All milk vendors should be compelled to take out a license. The cow stables should be kept scrupulously clean. Hearty co-operation on the part of dairy men would be of invaluable advantage not only to the consumers and municipal authorities, but to himself as well.

Vaccination.—F. G. Attwood,‡ after a series of experiments, has reached the conclusion that most of the untoward results of vaccination are due to the employment of an improperly prepared, and more especially an improperly protected, virus. To obviate deplorable results only sterile glycerinated lymph, hermetically sealed in glass tubes, should be used. Glycerinated vaccine is aseptic vaccine. It consists of the pulp of the cow-pox vesicles mixed with pure glycerine. Glycerine is a sufficiently powerful germicide to render germ free and to preserve aseptic the virus with which it may be mixed. The method used is as follows: The arm is washed well with soap and water and dried; then the point of inoculation is bathed

*Berl. klin. Woch., Nov. 20, 1899.
†Medicine, December, 1899.
‡N. Y. Med. Jour., Dec. 2, 1899.

with alcohol on a pledget of cotton, and after the alcohol has evaporated the site is scraped with a sterile lancet until serum begins to exude. If blood should be drawn, the spot should be carefully dried with a pledget of cotton before applying the lymph. The ends of the capillary glass tube are then broken off, and the lymph is injected upon the site of scarification by means of the rubber bulb placed upon one end of the tube. The lymph is then thoroughly rubbed into the abraded area with the lancet, and the spot is permitted to dry. Protection is afforded by covering the spot with a pad of sterile gauze, retained by means of a bandage. The glycerinated lymph may be subcutaneously injected with a sterilized hypodermic or an antitoxin syringe.

INTERNAL MEDICINE.

Early Recognition of Pulmonary Tuberculosis.—KNOPF.* The negative result of the examinations of the sputum has little or no significance, since the tubercle bacilli appear in the expectorations only after disintegration of the tubercles has taken place. The use of Koch's tuberculin as a diagnostic aid is not without its dangers. This procedure sometimes causes an unexpected generalization of the latent disease, with fatal results. The etiology plays quite an important rôle. Man is more disposed to consumption than woman; the poverty-stricken more than the wealthy; according to some, red-haired individuals more than those having blond, brown or black hair. Vocation, age, heredity, associations, previous ailments, are all important points to be noted in the anamnesis. Coughing spells brought on by a mere change of position, or by an extra respiratory effort, hemorrhages, slight or profuse, persistent elevations of temperature, increased through exercise, loss of weight, are suspicious symptoms. Murat describes, as an early symptom, the recognition on the part of the patient of a vibration of the affected portion of the lung during loud and vigorous talking. Attention must be paid to the upper air passages. Papillon's examinations with the Potain sphygmomanometer showed that an arterial pressure less than 13 cm. frequently indicated incipient tuberculosis. Chief stress is laid upon the physical examination, inspection percussion and auscultation. The agglutination process has not, in the hands of the author, yielded very satisfactory results, though he predicts for it better results upon perfection of the technique.

A Case of Infusorial Diarrhea.—H. SALOMON† describes a case of diarrhea due to infusoria, which presented some difficulties in diagnosis. The case is that of a man who complains chiefly with colicky pains and diarrhea; ten or twelve stools a day; appetite was good and other evidences of gastric disturbance absent. The condition of the patient became gradually worse, anemia and loss of weight developing. The character of the stools was not typical, they varied from a pea-soup to a watery consistency—color, yellowish-brown. Bacteriologically they were not characteristic, having rather fewer colonies than normal. Microscopically, masses of shining, pale, round or pear-shaped bodies appeared. They resembled in many ways the megastoma entericum. The flagellæ were difficult to see and more than four to six in one body were not demonstrable. The length of the organism varied between 0.014–0.018, the breadth from 0.0075–0.014. All attempts to cultivate the organism were unsuccessful. Inoculation in dogs and cats caused oval cysts to appear in the feces for two months afterward. No diarrhea resulted under injections of quinin, and calomel internally; the diarrhea was stopped and the infusoria disappeared. The original source of the infection was probably from the water, although an examination of the drinking water showed no traces of the infusoria.

Cerebral Hemorrhage.—AIKEN.* Cerebral hemorrhage is much more frequent in the young than is ordinarily supposed. The spontaneous cases, those not due to trauma, are caused by the rupture of a small blood vessel weakened by disease or increased pressure. Arterial degeneration is not confined to the aged alone, for they have frequently been seen post-mortem in persons from 20 to 30 years of age. When the blood vessels are in a diseased state, presenting miliary aneurysms, only a slight exertion, physical or mental, is necessary to produce the rupture. The state of the nervous system is frequently revealed through an examination of the blood-vessels. The treatment of these cases must be directed to the stopping of a hemorrhage. Absolute rest, the use of remedies employed to contract the arterioles and cause a determination of blood to other organs, are especially indicated. Surgery has not been resorted to in but few cases, but promises good results for the future.

The Early Diagnosis of Aneurysm of the Arch.—W. PORTER† reviews some of the symptoms heretofore described by various writers, but not made prominent in the text-books, and mentions two suggestions that are almost if not altogether new. The first consists in passing an esophageal bougie down opposite the site of the suspected aneurysm, when the impulse will be conveyed to the distal end of the tube and may be measured. The ordinary esophageal bougie can be covered at the end with gold-beater's skin, and after spraying the pharynx with a weak cocaine solution it can be easily passed without danger of violence to any thoracic lesion. The tube is then distended with water and connected with a U-tube, which is also filled with

*Jour. A. M. A., Dec. 9, 1899.
†Berl. klin. Woch., Nov. 13, 1899.

*Jour. A. M. A., Dec. 9, 1899.
†N. Y. Med. Jour., Dec. 9, 1899.

water. If the tube is placed approximately opposite the arch very little impulse is noted in the normal case. When there is aneurysmal distention and impulse at this point it is not difficult to get a more or less distinct vibration, which can be seen and estimated in the bent glass tube. The second suggestion is the possibility of auscultating an aneurysm of the arch by passing a solid esophageal sound to the site of the suspected aneurism. To the outer end a hard-wood disc is screwed, to which the stethoscope is applied or the autoscope may be used. Through the dense medium of the solid bougie the bruit is conveyed to the disc with great plainness. The vibrations of the latter are then determined by the autoscope or the stethoscope.

La Grippe.—GILCREEST.* La Grippe is a contagious, infectious disease caused by a specific germ, first described by Pfeiffer in 1892. The disease is air-borne and propagated mainly through human intercourse, as has been proven by numerous epidemics in prisons, barracks, etc. The pathologic lesions presented by uncomplicated la grippe are of a character common to all infective diseases, *i. e.*, parenchymatous degeneration of various organs. There are three distinct forms of la grippe: 1. Simple without complications. 2. Complicated with serious pulmonary affections. 3. Complicated with digestive and nervous symptoms. The complications are innumerable, including affections of the eye, ear, lungs, pleura, heart, genito-urinary tract, etc. Farson has observed an increase in the number of cases of appendicitis during grip epidemics. The author reports two cases of the severe nervous type, both of which are recovering. We have no specific for la grippe, so that each case must be treated symptomatically with reference to the complication. "To allay pains and soreness and restore free elimination from the skin, kidneys and intestines, are the indications which should guide us in our therapeutic applications."

Chronic Ankylosed Spondylitis.—H. SENATOR† describes a case of chronic ankylosed spondylitis of the so-called rheumatic variety. The case is that of a laborer 65 years old. Following attacks of rheumatism in various joints of the body, developed a stiffness and crookedness of the spinal column. A kyphosis from the fifth dorsal vertebra to the lumbar region. No special tenderness of the vertebra was observed; a lordosis of the cervical region exists. The electric examination of the muscles in the cervical region shows a diminished reaction, but no qualitative change. The diagnosis of a rheumatic spondylitis seems clear. The attacks of rheumatism preceding the present condition seem evidence enough. Two other possible etiologic factors might be considered—tuberculosis and senility. True, the age of the patient and the absence of any tubercular process elsewhere exclude the former, and the atypical development excludes the latter. Recently there have been numerous cases of this condition described and an attempt has been made to regard this as a new type of disease. This is wrong, as the condition has long been known and has often been described under the name of "arthritis deformans." It was the use of this term which led to so much confusion. The peculiarities of this form, due to the localization of the process, to the unequal distribution in the extremities, to the presence or absence of nervous involvement, are not of special importance and give no ground for regarding this condition as a separate and distinct disease.

*Jour. A. M. A., Dec. 9, 1899.

†Berl. klin. Woch., Nov. 25, 1899.

SURGERY.

Gastro-Enterostomosis Externa.—MITZEL,* of Bonn, warns surgeons not to follow the advice of Rutkowski, who did a gastrostomy after making an anastomosis between stomach and intestine. Mitzel reverses the procedure, sewing the rubber tube into the line of union between the two organs last named. He believes that the tube, if Rutkowski's method be followed, will often be drawn out of the intestine, and thus the main object of the operation defeated.

[Rutkowski's article, which appeared in *das Centralblatt für Chirurgie*, of Sept. 30, 1899, was in substance as follows: It is for many reasons impossible to nourish a patient immediately after the old forms of gastro-enterostomy; further, it is not always sure that stomach contents will enter the distal intestinal loop at all. He performs the ordinary anastomosis, and then after opening the anterior stomach wall passes part of a rubber tube into this organ and on through the new communication into the distal intestinal coil. The remaining end of the rubber tube is next brought out of the abdominal incision and a gastrostomy thus made. In three cases the method was highly successful, none of the patients vomiting after operation, and the increase of weight being marked in every case.—REVIEWER.]

A Case of Hourglass Stomach; Operation; Recovery.—C. G. CUMSTON.† The patient, a woman 47 years old, had typhoid fever at the age of seventeen, and had suffered ever since from indigestion, but at the age of twenty-six attacks of pain in the epigastric region and vomiting began to occur and continued more or less constantly ever since. The gastrectasis which was present was attributed to the presence of a stricture of the pylorus, because by palpation a somewhat painful mass could be detected in the left hypochondriac region. The lower border of the stomach, when moderately distended with carbon dioxid gas, was found at one finger's breadth below the umbilicus. Analysis of the stomach contents

*Centralblätt für Chirurgie, Nov. 11, 1899.

†N. Y. Med. Jour., Dec. 9, 1899.

after a test meal had been given showed a considerable amount of hydrochloric acid and a complete absence of lactic acid. An exploratory incision was advised. When the abdominal cavity was opened the pylorus was found perfectly normal. At about the junction of the lower with the middle third of the lesser curve was found a strictured portion, uniting a normal lower third with a dilated upper two-thirds of the viscus. A Heineke-Mikulicz plastic operation, as devised for the pylorus, was done, and when completed the line of union was eleven centimetres long. The after-treatment was simple and recovery was remarkably rapid. General health improved rapidly and the patient remained free from all her old troubles.

Amputation of the Prolapsed Rectum.—DEMBOWSKI* mentions that a large number of prolapsed rectums can be treated in no other way, because they are the seat of malignant tumors or of such extensive thickening and ulceration as to make a replacement impossible. According to this new method a long, heavy needle is run through the organ from side to side and the rectum thus divided into an anterior and a posterior half. These are caught with two forceps and each amputated for itself. In the wound thus made peritoneum is sutured, vessels are ligated, and the two lips of mucous membrane united. The limited loss of blood is an important factor, to which the author here gives due consideration.

The "Saturation Method" in the Management of Laparotomy.—S. LEWIS.† In laparotomy drainage of the tissue-fluids is an unavoidable evil. It predisposes to shock, tends to limit absorption, metabolism and excretion, and to the production of many unpleasant symptoms, and should be provided against, limited and promptly restored in every possible way. The application of this principle is called the "saturation method." In the preparation of patients two principles are of primary importance: 1. The intestinal canal should be, as far as possible, empty and free from bacteria or their products. 2. The tissues should be fluid-saturated to the physiologic limit. The first of those indications is met by limiting the diet, by several mild purgations instead of one imperfect or excessive, by the use of intestinal antiseptics. The final cleansing is effected by the administration of calomel with some cholagogue eighteen hours previous to operation. Six hours previous, 4 quarts of normal saline by enema should be given in Sims' position, slowly and with care, to insure long retention. The usual saline catharatic is omitted. The second principle is met by administering, for 48 hours preceding the enema, copious draughts of water 6 or 8 ounces every two hours; after operation each patient while still narcotized is given a quart of saline by enema, and as soon as ether-vomiting has ceased the administration of hot water is begun, in quantities sufficient to reach the stomach hot, not in teaspoonful doses to arrive lukewarm and be promptly vomited.

Amputation Through the Arm vs. Excision of the Elbow; a Case of Conservative Surgery.—GESSNER* reports a case of tuberculous disease of the elbow joint in which the general vitality was so low that an excision of the elbow was not deemed expedient. The heart presented hemic murmurs, consolidation had begun in the apex of the left lung, the urine contained 1.5 per cent. of albumin. It was doubtful if under these circumstances the patient could have lived through the administration of a general anesthetic. Amputation through the arm was done under local anesthesia produced with eucain. The local and general results were thoroughly satisfactory.

The Differential Diagnosis Between Chronic Joint Disease and Traumatic Neuroses.—R. H. SAYRE† briefly reviews the histories of three cases, showing how difficult it is at times to make a differential diagnosis between these diseases. From numerous other cases that have come under his observation, the following points were chiefly to be noted in making the diagnosis: 1. A neurosis is apt to follow injury sooner than is disease of a joint. 2. The temperature is usually subnormal in a neurosis and elevated in inflammation of a joint. 3. The local temperature is usually much lower in case of a neurosis than in disease of a joint. 4. Atrophy progresses more rapidly after injury to a nerve. 5. True muscular spasm is not present except in joint disease. It may be simulated however. 6. True night cries are pathognomonic of joint disease. 7. The appearance of the patient, if indicating a disordered nervous system, may aid in the diagnosis.

A New Method of Resecting the Elbow-Joint.—CAVAZZANI‡ considers his procedure more rapid of execution, as well as less mutilating, than any other. He takes into consideration the great importance, as far as a functional result is concerned, of the longer or shorter immobilization of the elbow after resection. The author's technique is as follows: From a point 2 c.m. below the outer condyle runs an incision as follows: around behind, parallel to the inter-articular line, as far as the inner border of the ulna. Next comes the exposure of the joint capsule in this same transverse line. The radial half of the tendo tricipitalis is now divided, the internal lateral ligament cut, the joint opened, and by forced adduction the inner side of the hand carried into the axilla. The remainder of the operation is done in the usual manner, and passive movement begun after 8 or 10 days.

*Centralblätt für Chirurgie, Sept. 30, 1899.
†Phila. Med. Jour., Dec. 9, 1899.

*Jour. A. M. A., Dec. 2, 1899.
†N. Y. Med. Rec., Dec. 9, 1899.
‡Centralblatt für Chirurgie, Oct. 21, 1899.

Practical Therapeutics.

A New Method of Treatment with Mercury —A. BLASCHKO.* On the theory that mercury, when applied to the skin, finds its way into the organism through the process of inhalation, Blaschko undertakes to reach this end by a specially prepared mercurial preparation, which does not have the disadvantages of the grey salve. The preparation is a sort of cotton cloth, which is impregnated with a 90 per cent. mercurial salve. This is called mercolint. The material is so well prepared that no trace either of the salve or of the mercury can be observed. Shirts are made of this material, which the patient wears next to the skin day and night. When the shirts become white, which takes about four weeks, the mercury has all been absorbed. These garments can be made of varying strength up to 50 per cent. mercury. The author has used this means of giving mercury in his clinic for some time with gratifying results. The advantages of this method over the inunction cure are obvious. Especially is it advantageous in small children and babies, pregnant women, etc. Such shirts can be worn for many months and would save the patient repeated inunctions cures, with all their discomfort and disadvantages.

Urotropin in Posterior Urethritis —DALTON.† Of the many new drugs which are from time to time brought before the profession, some of which unfortunately are of little use, urotropin, as a urinary antiseptic, appears to be of great utility. Nicolaier, Kelly and Wilcox have all reported much benefit from its use in cystitis and as a uric acid solvent. It may, therefore, be of some interest to record the results of treatment by it of gleet caused by posterior urethral troubles. In the five cases recounted most decided and marked benefit must be referred to the urotropin alone, the local and other treatments having improved matters up to a certain point, and then apparently ceased; a state of things unfortunately only too common in the cure of these troublesome complaints. In two other cases doubtful relief was obtained, due, however, in both to the patient's neglect of treatment and of abstinence of excess of alcohol. Whilst in several other cases now under observation a complete cure has not yet resulted, still in no case up to the present can a complete failure of the drug be recorded. The writer gives in detail his experience with urotropin in the five cases mentioned, demonstrating the correctness of his views. He concludes by stating that in all cases the reaction of the urine shall be, of course, ascertained, and if it be very alkaline a little mineral acid with gentian may be prescribed, whilst if very acid alkalies should be taken. The urotropin is to be taken well diluted with carbonated water.

*Berl. klin. Woch., Nov. 13, 1899.
†The Therapist, Oct. 16, 1899.

Disinfection of Cuspidors, Etc.—The Missouri State Board of Health have issued a notice under the heading of Sanitary Rules, etc., from which we quote: "For disinfecting cuspidors and other vessels, Platt's chlorides are recommended as safe and efficacious, in the proportion of one part to eight of water."

Dry Heat of High Degree as a Therapeutic Agent.—C. E. SKINNER* has employed dry heat, up to 500° F., in the treatment of various diseases. The apparatus used and the exact method of its application are fully described, together with the report of a number of cases showing the mode of procedure in each affection. He has found that hot air is a pain-relieving agent of unequaled value in those conditions where its application is indicated and possible, because of its constant effectiveness, rapidity of action, and the absence of deleterious after-effects. In rheumatism its action is so profound in connection with judiciously chosen drugs that it may almost claim a positive curative power of its own, and may be said to be the most powerful contributory agent we know. It is capable of stimulating tissue repair to a remarkable degree, as is demonstrated by its effect upon sprains. It is capable of influencing most happily septic inflammation of serous membranes, as shown by its action in peritonitis and pleurisy. It will many times at least give us the power of economizing nervous energy by relieving pain and other more or less dangerous conditions in pneumonia, thereby enabling us to refrain from sedatives and cardiac stimulation, and thus save for the patient nervous energy which will sometimes be sufficient to tide him over a crisis by which he would otherwise be overwhelmed. The addition of hot air to our armamentarium will enable us to increase by a large percentage the sum total of our power over disease.

Nordrach at Home.—Physicians all over the world are now talking and writing about a noted sanitarium in the Black Forest, Switzerland, for the special treatment of consumption, known as the Nordrach cure. Here Dr. Walthers and his assistants carry out the treatment on the modern ideas of rest, out of door life, proper feeding and required medication, and the results are wonderfully encouraging, between 70 and 80 per cent. of cures in cases not too long neglected. What a contrast to the old methods of treatment employed fifty years ago, when nearly every case of consumption ended sooner or later in the grave. A physician who has lately spent some time in the sanitarium studying these methods of treatment, says that wonderful results may be obtained at home with the Nordrach cure. Proper exercise in a pure atmosphere, generous diet, which should include regular doses of Scott's emulsion of cod liver oil, an out of door life, and plenty of sleep in rooms with the windows open, invariably bring about the desired result. Too much

*N. Y. Med. Jour., Oct. 28, Nov. 25, Dec. 2 and 9, 1899.

reliance cannot be placed upon this emulsion of cod liver oil. It contains the best quality of oil in a finely emulsified condition; it does not separate, and, as it is purely mechanical, no change takes place after bottling. It has great medicinal as well as food value, as has been proven many times during the past quarter of a century. Scott's emulsion, pure air, rest and graduated exercise properly adjusted bring about a marked change; strength and vigor return, the tubercle bacilli are expelled, the flesh and appetite regained, and health restored.

Therapeutic Uses of Gude's Pepto-Mangan.—A. FASANO,* professor of the University of Naples, Italy, has published a very elaborate article on the newer preparations of iron and manganese, and after a very minute study from a chemical, physiologic and therapeutic point of view, comes to the conclusion that the only one of real merit is Gude's pepto-mangan, in the treatment of anemia and chlorosis, no matter from what cause. He shows conclusively how both the iron and the manganese are necessary in the treatment of these affections, and also how Gude's pepto-mangan meets all the requirements of an iron and a manganese medication without any of their disadvantages. He reports over one hundred cases successfully treated by it, among them the following ones: R. T., 28 years old, blacksmith, was sick for several months, with all the symptoms of simple anemia, and living under the worst possible conditions. Appeared for treatment for the first time on July 25. An examination of the blood showed the number of the red blood cells to be 3,670,000, and the hemoglobin 79 per cent. He was given Gude's pepto-mangan, one spoonful twice a day at first, and afterwards three times a day. Improvement was noticed very soon, and at the end of one month the number of red blood cells was 4,580,000, hemoglobin 89 per cent. Patient gained 2 kg. in weight. Mucous membranes were normal in color, and the anemic bruit had disappeared. At the end of the sixth week the number of red blood cells was 4,950,000 and the hemoglobin 96 per cent.

L. M., 19 years old, had chlorosis for over one year before she applied for treatment. Her case was a very severe one. Extreme palor of the face and of the mucous membranes; lassitude, dyspnea on the slightest exertion, easily fatigued, headache, disordered digestion, vertigo, tinnitus aurium, very weak pulse, almost filiform, hemic murmur at the apex, neuralgia of the trigeminus, and for some months previous amenorrhea. An examination of the blood showed the number of red blood cells to be 4,150,000, hemoglobin 85 per cent. She had taken a great deal of medicine before, and tried a change of climate without any good results. She was given two spoonfuls of Gude's pepto-mangan a day. At the end of three weeks the improvement was really marvelous; the palor had almost disappeared, she had regained her spirits, dyspnea greatly diminished, pulse less frequent and stronger, hemic bruit much weaker. The number of red blood cells was 4,380,000, and hemoglobin 89 per cent. She was seen again at the end of six weeks, and the improvement had continued, dyspnea practically absent, no more headache, neuralgia of the trigeminus nor tinnitus aurium. Examination of the blood showed practically normal conditions, and at the end of eight weeks she was discharged cured. She gained 2 kgs. during the treatment.

Its good effects in post-malarial anemia can be judged by the following case: A. T., 44 years old, farmer; worked for many years in malarious localities, and had several attacks of fever, the last one being a very severe pernicious intermittent, followed by very marked malarial cachexia. Examination of the blood gave 3,300,000 red blood cells, and 74 per cent. hemoglobin. He was given daily four spoonfuls of pepto-mangan, which was well borne by the stomach. At the end of three weeks he felt much better; hemoglobin was 81 per cent., and the red blood cells 3,600,000. He was seen again in six weeks, and improvement continued. At the end of eleven weeks number of red blood cells was 4,210,000; hemoglobin, 86 per cent.; patient had gained $2\frac{3}{4}$ kg. He moved out of town, and was not followed after that. In the anemia of the first stage of tuberculosis the results obtained by the use of pepto-mangan are not so brilliant as the preceding ones, but nevertheless the disease is influenced by it for the better.

In anemia due to uterine disorders, as menorrhagia and metrorrhagia, the results are most satisfactory. In twelve cases of scrofula the exhibition of pepto-mangan was followed by marked improvement and in some cases by a complete cure, as in the following one: L. M., 15 years old, son of tubercular father. Has enlargement of the lymphatic glands, scrofulous eczema, etc. Examination of the blood shows the number of red blood cells to be 3,780,000; hemoglobin 83 per cent. He was given two spoonfuls of pepto-mangan a day and an appropriate diet. At the end of three weeks there was marked improvement, and an examination of the blood showed an increase of 350,000 in the number of the red blood cells, and the hemaglobin was found to be 87 per cent. At the end of three months the number of the red blood cells was 4,900,000 and hemoglobin 97 per cent. All signs of scrofula had disappeared. Patient gained 3 kg. during the treatment. Just as good results were obtained in ten cases of rickets, as well as in several cases of severe anemia following acute diseases.

*Archivio Internazionale de Medicina e Chirurgia, May, 1899.